

Mineral Industry Surveys

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TUNGSTEN IN DECEMBER 1999

On the basis of preliminary data, U.S. net production of intermediate tungsten products, including metal powder and tungsten carbide powder produced from hydrogen-reduced metal powder, was approximately the same during 1999 and 1998, according to the U.S. Geological Survey.

U.S. reported consumption of ferrotungsten, tungsten metal powder, tungsten carbide powder, tungsten scrap, and other tungsten materials during 1999 was 12% lower than that during 1998. These materials were used to make alloys, cemented carbides, mill products, catalysts, and pigments.

Data for U.S. imports and exports for December 1999 will be published in a subsequent issue.

Note

All data in this report have been rounded to no more than three significant digits. Totals and percentages were calculated by using unrounded data.

Update

On February 15, the Defense National Stockpile Center (DNSC), U.S. Department of Defense, announced that it had awarded approximately 635 tons of tungsten contained in ores and concentrates at a total value of \$2.7 million. The following companies received awards: Comsup Commodities, Inc. of Fort Lee, NJ, Kennametal, Inc. of Latrobe, PA, and Osram Sylvania

Inc. of Towanda, PA. The next sale of tungsten ores and concentrates is scheduled for March 28, 2000 (Defense National Stockpile Center, 2000b). The next sale of tungsten carbide powders has been rescheduled for March 15 (Defense National Stockpile Center, 2000a). Further information on DNSC's tungsten sales program is available from Phyllis Shockley, contracting officer, at (703) 767-5482.

Prices for tungsten ore concentrates in dollars per metric ton unit from Metal Bulletin are listed below. Prices in dollars per short ton unit were converted from metric ton unit prices and rounded to the nearest dollar. These prices represent combined prices for wolframite and scheelite ore concentrates with a minimum tungsten trioxide (WO_3) content of 65%. The prices for January 1 to 31, 2000, are as follows:

Low—\$38/metric ton unit WO_3 (\$34/short ton unit WO_3)
High—\$48/metric ton unit WO_3 (\$44/short ton unit WO_3)

References Cited

Defense National Stockpile Center, 2000a, Amendment No. 004 to solicitation of offers for DLA-tungsten carbide powder, ferro and metal powder-002: Fort Belvoir, VA, Defense National Stockpile Center news release, February 15, 1 p.
———2000b, Stockpile awards tungsten ores & concentrates: Fort Belvoir, VA, Defense National Stockpile Center news release, February 15, 1 p.

TABLE 1
U.S. SALIENT TUNGSTEN STATISTICS 1/

(Metric tons, tungsten content)

Period	Concentrate			Reported scrap consumption	Intermediate products		
	Reported consumption	Imports for consumption	Stocks, end of period 2/		Net production 3/	Reported consumption 4/	Stocks, end of period 5/
1998:							
December	449	811	514	178	621	614	1,340
January-December 6/	3,210	4,750	XX	3,300	9,630	8,980	XX
1999:							
January	W	129	589	278	812	671	1,420
February	W	156	W	307	711	699	1,430
March	W	714	308	343	816	669	1,490
April	348	90	W	302	767	630	1,390
May	388	383	W	306	832	647	1,470
June	313	662	W	305	784	596	1,440
July	333	232	531	228	721	646	1,430
August	323	145	513	294	829	667	1,420
September	395 r/	94	W	256 r/	936 r/	702	1,350 r/
October	W	133	W	335 r/	957 r/	678	1,460 r/
November	W	71	W	244 r/	694 r/	652 r/	1,470 r/
December	W	NA	W	248	717	659	1,460
Total 6/	2,100	NA	XX	3,450	9,580	7,920	XX

r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in total or year-to-date. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Reported by consumers.

3/ Net production of tungsten metal powder, tungsten carbide powder, chemicals, and other products.

4/ Includes estimates and scrap.

5/ Reported by producers.

6/ Does not include withheld data.

TABLE 2
U.S. PRODUCTION, CONSUMPTION, AND STOCKS OF
AMMONIUM PARATUNGSTATE, BY MONTH 1/

(Metric tons, tungsten content)

Period	Production	Consumption	Stocks, end of period 2/
1998:			
December	W	718	603
January-December 3/	838	9210	XX
1999:			
January	W	536	582
February	W	474	512
March	W	831	542
April	W	701	476
May	W	739	496
June	W	W	648
July	W	821	503
August	W	723	505
September	W	726	448
October	W	870	496
November	W	728	449
December	W	W	W
Total 3/	W	7150	XX

r/ Revised. W Withheld to avoid disclosing company proprietary data; not included in total or year-to-date. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Producers and consumers.

3/ Does not include withheld data.

TABLE 3
U.S. PRODUCTION AND STOCKS OF TUNGSTEN PRODUCTS 1/

(Metric tons, tungsten content)

Product	Net production 2/				Stocks at end of period		
	1999			Year to date	1999		
	1998	November	December		1998	November	December
Metal powder	4,600	314 r/	346	4,660	719	781 r/	775
Tungsten carbide powder (made from metal powder)	5,040	380 r/	371	4,920	576	562 r/	556
Cast and crystalline carbide powder; other	W	W	W	W	W	W	W
Chemicals	W	W	W	W	46	131	132
Total 3/	9,630	694 r/	717	9,580	1,340	1,470 r/	1,460

r/ Revised. W Withheld to avoid disclosing company proprietary data; not included in total.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Gross production less quantity used to make other products in table.

3/ Does not include withheld data.

TABLE 4
U.S. REPORTED CONSUMPTION OF TUNGSTEN, BY END USE IN 1999 1/ 2/ 3/

(Metric tons, tungsten content)

End use	November	December	Year to date
Steel:			
Tool	W	W	W
Other	12 r/	17	177
Superalloys	38	33	372
Other alloys (excludes steels and superalloys) 4/	W	W	W
Cemented carbides 5/	430 r/	441	5,370
Mill products made from metal powder	79	75	1,290
Chemical uses	W	W	W
Miscellaneous and unspecified	93 r/	92	708
Total	652 r/	659	7,920

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Does not include materials used in making primary tungsten products.

3/ Includes estimates.

4/ Includes welding and hard-facing rods and materials, wear- and corrosion-resistant alloys, and nonferrous alloys.

5/ Includes diamond bit matrices, cemented and sintered carbides, and cast carbide dies or parts.

TABLE 5
U.S. REPORTED CONSUMPTION AND CONSUMER STOCKS OF TUNGSTEN MATERIALS 1/ 2/ 3/

(Metric tons, tungsten content)

Period	Ferro-tungsten	Tungsten metal powder	Tungsten carbide powder	Scheelite (natural, synthetic)	Tungsten scrap	Other tungsten materials 4/	Total
Consumption:							
1998:							
December	41	62	468	--	35	8	614
January-December	493	1,370	6,560	--	460	97	8,980
1999:							
January	43	95	490	--	34	10	671
February	43	122	491	--	33	9	699
March	45	98	488	--	30	9	669
April	43	121	432	--	25	9	630
May	45	141	422	--	30	9	647
June	41	102	419	--	25	10	596
July	41	111	456	--	28	10	646
August	41	145	449	--	21	10	667
September	57	170	445	--	21	9	702
October	47	117	483	--	22	9	678
November	44 r/	88	483 r/	--	26 r/	11	652 r/
December	48	82	488	--	29	12	659
January-December	538	1,390	5,550	--	324	115	7,920
Stocks:							
1998:							
December	18	17	431	--	36	16	517
1999:							
January	29	25	416	--	28	17	514
February	25	22	403	--	32	16	498
March	27	26	419	--	26	17	515
April	26	24	410	--	20	17	497
May	27	19	406	--	20	18	490
June	33	18	404	--	20	20	494
July	31	20	414	--	18	18	502
August	36	22	401	--	24	17	499
September	22	19	399	--	23	17	480
October	27	22	397	--	28	16	489
November	25 r/	24	395	--	22 r/	18	483 r/
December	32	19	398	--	18	18	484

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Does not include materials used in making primary tungsten products.

3/ Includes estimates.

4/ Includes tungsten chemicals.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF TUNGSTEN, BY COUNTRY 1/

(Metric tons, tungsten content)

Period and country of origin	Ores and concentrates	Ammonium tungstates	Ferro- tungsten	Metal powder	Tungsten carbide powder	Other 2/	Total	Total year to date
1998	4,750	1,920	599	459	944	3,110	11,800	XX
1999:								
September	94	279	13	16	53	314	770	8,060
October	133	113	14	58	77	233	628	8,690
November:								
Australia	--	--	--	--	--	--	--	167
Austria	--	--	--	--	--	1	1	44
Belgium	--	--	--	(3/)	--	(3/)	(3/)	3
Bolivia	41	--	--	--	--	--	41	348
Burma	--	--	--	--	--	--	--	91
Canada	--	--	--	(3/)	33	8	41	392
China	--	66	44	18	5	191	324	4,670
Czech Republic	--	--	--	--	--	--	--	(3/)
Estonia	--	--	--	--	--	--	--	(3/)
France	--	--	--	--	(3/)	--	(3/)	2
Germany	--	17	--	(3/)	8	8	33	270
Hong Kong	--	--	--	--	--	--	--	1
Hungary	--	--	--	--	--	(3/)	(3/)	10
India	--	--	--	--	--	(3/)	(3/)	(3/)
Ireland	--	--	--	--	--	--	--	(3/)
Israel	--	--	--	--	--	(3/)	(3/)	76
Italy	--	--	--	--	--	--	--	(3/)
Japan	--	--	--	1	--	3	4	44
Kazakhstan	--	--	--	--	--	--	--	461
Korea, Republic of	--	--	--	--	--	(3/)	(3/)	10
Luxembourg	--	--	--	--	--	--	--	34
Malaysia	--	--	--	--	--	(3/)	(3/)	(3/)
Mexico	--	--	--	--	--	(3/)	(3/)	27
Mongolia	16	--	--	--	--	--	16	39
Netherlands	--	--	--	--	--	(3/)	(3/)	37
Peru	--	--	--	--	--	--	--	11
Portugal	--	--	--	--	--	--	--	342
Russia	--	--	--	--	--	38	38	1,860
Rwanda	14	--	--	--	--	--	14	41
Singapore	--	--	--	--	--	(3/)	(3/)	(3/)
South Africa	--	--	--	--	--	--	--	(3/)
Spain	--	--	--	--	--	--	--	(3/)
Sweden	--	--	--	--	--	--	--	34
Switzerland	--	--	--	--	--	(3/)	(3/)	3
Taiwan	--	--	--	--	--	(3/)	(3/)	(3/)
Thailand	--	--	--	--	--	--	--	11
United Kingdom	--	--	--	--	--	(3/)	(3/)	175
Total	71	84	44	19	45	249	512	9,200
Total, year to date	2,810	1,860	582	301	687	2,960	9,200	XX

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other unwrought tungsten, wrought tungsten, calcium and other tungstates, tungsten oxides, tungsten chlorides, other tungsten compounds, ash and residues containing mainly tungsten, and other mixtures of inorganic compounds containing tungsten. Tungsten content estimated in part.

3/ Less than 1/2 unit.

Note: Imports of waste and scrap in November 1999 totaled 58 metric tons, tungsten content.

Source: Bureau of the Census.

TABLE 7
U.S. EXPORTS OF TUNGSTEN, BY COUNTRY 1/

(Metric tons, tungsten content)

Period and country of destination	Ores and concentrates 2/	Ammonium tungstates	Metal powder 2/	Tungsten carbide powder	Other 3/	Total	Total year to date
1998	10	287	851	1,240	467	2,860	XX
1999:							
September	3	--	97	42	35	177	1,630
October	--	--	36	59	37	132	1,760
November:							
Argentina	--	--	1	--	--	1	3
Australia	--	--	1	(4/)	--	1	21
Austria	--	--	--	--	--	--	21
Belgium	--	--	--	11	(4/)	11	151
Bolivia	--	--	--	--	--	--	1
Brazil	--	--	(4/)	--	1	2	39
Canada	--	--	6	12	3	20	240
Chile	--	--	(4/)	(4/)	--	(4/)	3
China	--	--	--	--	--	--	4
Congo (Kinshasa)	--	--	--	--	--	--	8
Czech Republic	--	--	--	--	--	--	5
Denmark	--	--	--	--	--	--	7
Finland	--	--	--	--	(4/)	(4/)	1
France	--	--	1	(4/)	2	3	58
Germany	--	--	12	4	17	32	524
Hong Kong	--	--	--	--	2	2	31
Hungary	--	--	(4/)	--	1	1	12
India	--	--	--	--	3	3	117
Indonesia	--	--	--	--	1	1	2
Ireland	--	--	--	(4/)	--	(4/)	9
Israel	--	--	--	--	1	1	46
Italy	--	--	1	3	(4/)	4	76
Japan	--	--	1	1	3	5	88
Korea, Republic of	--	--	(4/)	(4/)	(4/)	(4/)	15
Luxembourg	--	--	--	5	(4/)	5	13
Malaysia	--	--	--	--	--	--	1
Mexico	(4/)	--	1	1	1	3	52
Monaco	--	--	--	--	(4/)	(4/)	(4/)
Netherlands	--	--	--	3	(4/)	3	76
New Zealand	--	--	--	--	--	--	(4/)
Panama	--	--	(4/)	--	--	(4/)	1
Poland	--	--	--	--	1	1	3
Singapore	--	--	(4/)	(4/)	(4/)	1	8
South Africa	--	--	(4/)	(4/)	--	(4/)	22
Spain	--	--	(4/)	--	--	(4/)	8
Sweden	--	--	--	--	(4/)	(4/)	82
Switzerland	--	--	3	--	(4/)	3	25
Taiwan	--	--	(4/)	--	1	1	21
Thailand	--	--	--	--	--	--	1
Turkey	--	--	--	--	--	--	1
United Arab Emirates	--	--	--	--	(4/)	(4/)	(4/)
United Kingdom	--	--	15	(4/)	5	19	84
Venezuela	--	--	--	(4/)	--	(4/)	3
Other	--	--	--	--	--	--	2
Total	(4/)	--	42	40	41	123	1,880
Total, year to date	24	102	662	646	451	1,880	XX

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Tungsten content estimated from reported gross weight.

3/ Includes wrought tungsten, ferrotungsten, and other tungstates. Tungsten content estimated in part.

4/ Less than 1/2 unit.

Note: Estimated exports of waste and scrap in November 1999 totaled 42 metric tons, tungsten content.

Source: Bureau of the Census.